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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/497,515	02/04/2000	Shuji Hitomi	Q57834	7579

7590 10/17/2003

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EXAMINER

MERCADO, JULIAN A

ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 10/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/497,515	HITOMI
	Examiner Julian A. Mercado	Art Unit 1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 7-29-03.

2a) This action is **FINAL**.                                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-10 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-10 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) Notice of References Cited (PTO-892)                                    4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)                            5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                            6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Remarks***

This Office Action is responsive to applicant's reply filed July 29, 2003.

***Claim Rejections - 35 USC § 102 and 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-7, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Mussell et al. (U.S. Pat. 5,620,807).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mussell et al. as applied to claims 1-7, 9 and 10 above.

The above rejections are maintained for the reasons of record. The pending claims are as previously presented and as such are unamended.

Applicant's arguments have been fully considered, however they are not persuasive. Applicant appears to submit that in Mussell et al. the liquid-based polymer solution will be solidified and the solidified polymer is non-porous and shrinking in volume during the drying process. (response, page 3 line 1-4) That is, "the porosity will be produced *within the structure of the solidified composition* of the shrunken polymer material with no porosity". (line 5-7, emphasis added) It appears to the examiner, therefore, that applicant is distinguishing the claimed "porous polymer" from Mussell' et al.'s disclosed "solidified composition". However, Mussell et al. teaches the following, "[t]he composition used to prepare the small pore region of

the intermediate layer preferably contains polymer, carbon particles, and a suitable carrier" (col. 3 line 59-61), "[t]he composition used to prepare the small pore region is preferably a liquid-based composition which will solidify after application" (col. 4 line 21-23), the composition contains dissolved polymer solids (col. 4 line 31-34), and hydrophobic fillers are used to "affect the wettability of its pores, as well as increase the porosity and mean pore size of the solidified composition". (col. 4 line 41-47) Thus, Mussell et al. is maintained to teach a porous polymer, itself having pores, insofar as the *solidified polymeric composition* [emphasis added] is specifically disclosed to contain pores. Moreover, in Mussell et al. the degree of the polymer's porosity is optimizably increased by addition of hydrophobic fillers. As set forth in the prior Office Action, applicant's claimed "porous polymer" does not preclude a solidified polymeric composition.

Applicant's cited English abstract for "Effect of Filler Addition on Pore Formation of Porous Polymer Films for Lithium Secondary Cells" is acknowledged. At the outset, this reference is not found immediately relevant to the claimed invention in that reference is drawn towards lithium secondary batteries and not fuel cells *per se*. Notwithstanding, applicant appears to have concluded based on the information in the reference that the present invention is clearly different from that shown in Mussell et al. The abstract of the reference outlines two processes for porous polymeric film formation, 1) a solvent extraction process and 2) a dry process. Applicant's conclusion is that "the porosity of Mussell is not in the polymer material itself in the solidified composition". In reply, the examiner asserts, as above, that the solidified composition is a polymeric material, thus, pores in the solidified composition reads on the claimed pores in the polymer material itself.

Additionally, the reference is noted to merely set forth that *both* the solvent extraction process (as arguably employed by applicant) and dry process (as arguably employed by Mussell et al.) results in porosity of the film, i.e. the solidified polymeric composition, albeit with different degrees of porosity, shrinkage and homogeneity. The abstract of the reference falls short in demonstrating that the two processes result in different structural porosities of the formed film. Absent of such a showing, the examiner maintains that porous polymer as taught by Mussell et al. is independent of the process by which it is obtained.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian A. Mercado whose telephone number is (703) 305-0511. The examiner can normally be reached on Monday through Friday.

Art Unit: 1745

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (703) 308-2383. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
JAM

  
Patrick Ryan  
Supervisory Patent Examiner  
Technology Center 1700